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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): PEARCE 26

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on February 26, 2010

Signature /Elizabeth Schumacher/

Typed or printed name Elizabeth Schumacher

Application Number	Filed
09/755,826	2001-01-04

First Named Inventor: Charles W. Pearce

Art Unit	Examiner
2893	Jack SJ Chen

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- ☑ attorney or agent of record. Registration number 44995.
- ☐ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

/Greg H. Parker/
Signature

Greg H. Parker
Typed or printed name

972-480-8800
Telephone number

February 26, 2010
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Charles W. Pearce
Serial No.:	09/755,826
Filed:	January 4, 2001
Title:	METHOD OF MANUFACTURING A LATERALLY DIFFUSED METAL OXIDE SEMICONDUCTOR DEVICE
Grp./A.U.:	2893
Examiner:	Jack S J Chen
Confirmation No.:	5388

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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/Elizabeth Schumacher/
(Signature of the person signing the certificate)

Sir:

PRE-APPEAL BRIEF REQUEST FOR REVIEW

The Applicants have carefully considered this application in connection with the Examiner's Final Rejection mailed November 27, 2009, and respectfully request a pre-appeal brief review of this application in view of the following remarks.

REMARKS/ARGUMENTS

The Applicants originally submitted Claims 1-20 in the application. Previously, the Applicants amended Claims 1-11 and canceled Claims 4-14 and added new Claims 21-22. In an Election Restriction, the Applicants elected Claims 1-3, 5-9 and 21. Accordingly, Claims 1-3, 5-9 and 21 are currently pending in the application.

I. Rejection of Claims 1-3, 5-9 and 21 under 35 U.S.C. §103

The Examiner has rejected Claims 1-3 and 5-9 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,841,166 to D'Anna *et al.* ("D'Anna"). Independent Claim 1 currently includes the element of forming a lightly-doped source/drain region between first and second isolation structures and with only a first dopant and

without the use of a mask layer between the first and second isolation structures. D'Anna fails to teach or suggest this element.

D'Anna is directed to a lateral DMOS transistor for RF/microwave applications. (Title). D'Anna teaches that a P+sinker **44** is formed within a P-epi layer **42.** D'Anna then teaches that an N-drift region 46 is formed within the P-epi layer **42** proximate the P+sinker **44.** (See, D'Anna at column 2, lines 54-56). Because of this order of formation, the N-drift region **46** inevitably must to use one or more masks during its formation such that it does not counter dope the P+sinker **44**. D'Anna then teaches that an active area mask is formed to define where the field oxides **52** will be present, and that the field oxides **52** are then grown to a thickness of 0.5 to 3 microns. (See, D'Anna at column 2, lines 59-65). Accordingly, D'Anna teaches first forming its P+sinker **44**, then forming its N-drift region **46** using one or more masks, and only then forming its field oxides **52.** In contrast, Claims 1 and 11 currently require first forming first and second isolation structures and then forming a lightly-doped source/drain region between the first and second isolation structures without the use of a mask. As the Examiner likens the N-drift region **46** of D'Anna to the claimed lightly doped source/drain region, as well as the field oxides **52** of D'Anna to the claimed isolation structures, D'Anna must fail to teach or suggest the element of forming a lightly-doped source/drain region between first and second isolation structures, as well as that the lightly-doped source/drain regions are formed with only a first dopant and without the use of a mask layer.

The Examiner, has only begun to argue that the order of forming the isolation structures with respect to the lightly-doped source/drain region is an obvious design choice over the teachings and suggestions of D'Anna. The Applicant strongly disagrees with this assertion. First, D'Anna goes to great effort and expense to form its field oxide regions **52** after formation of its doped sinker region **44** and N- drift region **46**. Specifically, D'Anna devotes an entire paragraph (see, Column 2, lines 47-65) to this specific process. Furthermore, D'Anna uses the process of growing the field oxide region **52** to drive in the doped sinker region **44**, or vice versa. Accordingly, it is very important to the process of D'Anna that its field oxide region **52** be formed after implantation of its doped sinker

region **44**, and thus after implantation of its N- drift region **46**--so as to drive in the doped sinker region **44**. Accordingly, D'Anna actually teaches away from forming its field oxide region **52** prior to its doped sinker region **44** and N- drift region **46**. Such a teaching away makes the modification suggested by the Examiner non-obvious, and thus merely based upon hindsight. The Review Panel is well aware that using hindsight, such as is the case here, is impermissible.

Therefore, D'Anna fails to teach or suggest the invention recited in independent Claim 1 and its dependent claims, when considered as a whole. D'Anna must therefore fail to establish a prima facie case of obviousness with respect to these Claims. It is therefore respectfully submitted that claims 1-3 and 5-9 are therefore not obvious in view of D'Anna.

In view of the foregoing remarks, the cited reference does not support the Examiner's rejection of Claims 1-3 and 5-9 under 35 U.S.C. §103(a). The Applicant therefore respectfully requests the Review Panel to remove the rejection of independent Claim 1 and the Claims dependent thereon.

II. Rejection of Claims 1-3 and 21 under 35 U.S.C. §103

The Examiner has rejected Claims 1-3 and 21 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,918,026to Kosiak *et al.* ("Kosiak"). As indicated above, independent Claim 1 currently includes the element of forming a lightly-doped source/drain region between first and second isolation structures and with only a first dopant and without the use of a mask layer between the first and second isolation structures. Kosiak fails to teach or suggest this element.

Kosiak is directed to a process for forming a vertical bipolar transistor and high voltage CMOS in a single integrated circuit chip. (Title). Kosiak teaches that lightly doped n-type wells **114**, **214**, and **314** are formed within a substrate **12**. (See, Kosiak at column 4, lines 39-45, and the associated FIG. 2B). Kosiak, by the nature of its manufacturing process, requires that one or more masks **20a, 20b** are needed to form its lightly doped n-type wells **114**, **214**, and **314**. Kosiak then teaches that many other processing steps are performed before forming field oxide

regions **50, 120, 220, 320,** and **322** to isolate various different features of the monocrystalline silicon chip **10.** (See, Kosiak at column 5, lines 40-55, and the associated FIG. 2E). Accordingly, Kosiak teaches first forming its lightly doped n-type wells **114, 214,** and **314** using one or more masks **20a, 20b,** and then forming its field oxide regions **50, 120, 220, 320,** and **322.** This is in direct contrast to that presently claimed within independent Claims 1 and 11, which require forming a lightly-doped source/drain region between first and second isolation structures and with only a first dopant and without the use of a mask layer between the first and second isolation structures. Thus, Kosiak fails to disclose this claimed element.

The Examiner, again only recently, argues that the order of forming the isolation structures with respect to the lightly-doped source/drain region is an obvious design choice over the teachings and suggestions of Kosiak. The Applicant strongly disagrees with this assertion. First, Kosiak goes to great effort and expense to form its field oxide regions **50, 120, 220, 320 and 322** after formation of its lightly doped n-type wells **114, 214,** and **314.** Specifically, Kosiak devotes many paragraphs (see, Column 5, lines 1-45) to this specific process. Furthermore, Kosiak uses the process of growing the field oxide regions **50, 120, 220, 320 and 322** to drive in the boron implanted regions **208** and **308,** or vice versa. Nevertheless, as this is a vertical bipolar transistor, the lightly doped n-type wells **114, 214,** which contain the boron implanted regions **208** and **308,** must be formed prior to the boron implanted regions **208** and **308** themselves. Accordingly, it is very important to the process of Kosiak that its field oxide regions **50, 120, 220, 320** and **322** be formed after implantation of its boron implanted regions **208** and **308,** so as to drive them into the substrate, and further that the boron implanted regions **208** and **308** ultimately need be formed after implantation of its lightly doped n-type wells **114, 214.** Accordingly, Kosiak actually teaches away from forming its field oxide regions **50, 120, 220, 320** and **322** prior to its boron implanted regions **208** and **308** and lightly doped n-type wells **114, 214.** Such a teaching away makes the modification suggested by the Examiner non-obvious, and thus merely based upon hindsight. The Examiner is well aware that using hindsight, such as is the case here, is impermissible.

Therefore, Kosiak fails to teach or suggest the invention recited in independent Claim 1 and its dependent claims, when considered as a whole. Kosiak must therefore fail to establish a prima facie case of obviousness with respect to these Claims. It is therefore respectfully submitted that claims 1-3 and 21 are therefore not obvious in view of Kosiak.

In view of the foregoing remarks, the cited reference does not support the Examiner's rejection of Claims 1-3 and 21 under 35 U.S.C. §103(a). The Applicant therefore respectfully requests the Review Panel to remove the rejection of independent Claim 1 and the Claims dependent thereon.

III. Conclusion

In view of the foregoing remarks, the Applicant sees all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicits a Notice of Allowance for Claims 1-3, 5-9 and 21.

The Applicant requests the Reviewers to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

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Dated: February 26, 2010
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